LETTER C: OJAI RAPTOR CENTER

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TO: SUPERINTENDENT
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DATE: 2 SEP 2000

SUBJ: DEIS FOR ANACAPA RESTORATION PROJECT (AIRP). GOAL OF AIRP: ERADICATION OF NONNATIVE RATS FROM SUBJECT ISLAND.

REF: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR ANACAPA ISLAND RESTORATION PROJECT

1. Thank you for letting me read and comment on this DEIS. Not surprisingly, it is thorough, literate, and accurate, mostly. It has the look and feel of a document prepared by contractors well versed in this art form.

2. My credentials in brief are BA UC Berkeley biological sciences general curriculum; many years of field experience and scientific writing and editing with the US Forest Service as well as 10 years recent experience in providing medical care to wildlife injured, orphaned, or poisoned as their environment has become restricted and degraded.

3. To cut directly to the chase, given your intention to eradicate exotic rodents from Anacapa and inferentially other Channel Islands, I will stipulate to your choice of brodifacoum for initial attack and aerial dispersal in combination with bait stations as the preferred means of poisoning the target species, black rats. But the devil, in this case, is in the unstated premise and assumptions.

C1 4. **Feasibility**. Have you established that it is feasible to eradicate *Rattus* spp. from Anacapa? I see no feasibility studies included or cited nor any statement of the *probability* of success in one year, two years, or n years. The sad history of eradication programs is that they do not achieve their initial objective and become self-perpetuating. Some years back the journal Science published a sidebar titled: Gypsy Moths - 50, USDA - 0 to celebrate 50 years of gypsy moth eradication. You may counter that yours is small island population with less reproductive potential than lepidoptera, and in Appendix C you list some 33 island rat eradication programs - with the *implication* they were all successful. Were they? And what were the cost - benefit and risk - benefit results, the time to completion data, collateral damage, etc? What is the similarity of Anacapa to each of the islands in terms of latitude, climate, size, and relief? Anacapa is larger than all but three of the cases cited, most of which had target species other than *Rattus rattus*. . Given the costs and risks, is it too much to expect you to be explicit about feasibility and compare identical cases or at least present persuasive argument for the similarity of cases? There are many islands with negligible relief that can be made free of rats, but Anacapa is not one of them.

C1: A feasibility study was conducted in 1996 and a report submitted to the Channel Islands National Park (see Tershy et al. 1997). The probability of complete removal, or eradication, of rats from Anacapa Island is high. Eradication of rats from islands has taken place on islands in the sub-Antarctic, to tropical atolls to the temperate Northern Pacific in Canada. The basic underlying principal that resulted in the successful eradication programs has been the delivery of a bait containing a rodenticide into every rat territory on the island. This principal has been applied on all islands in all types of climates and sizes from small offshore rocks to the largest island of over 3000 hectares (7,500 acres). The objective of the AIRP is eradication and not control, therefore, treatment of the entire island is necessary for meeting the purpose and need. The topography of Anacapa was taken into account when developing the alternatives. Aerial broadcast is the only method for ensuring bait is delivered into every territory.

Appendix C is a list of successful eradications.

C2 5. **Assumptions**. **1)** *The rats will take the bait.* Professional pest controllers have learned how difficult it is get all the rats to take the bait. When they have time and funds they typically pre-bait and pre-trap with innocuous baits and unset traps until they hope they have the whole population trained to take the bait. Then they blitz the target population with a combined assault of baits, mechanical traps, and glue traps. If even one pregnant female rat escapes, the area is repopulated at a predictable geometric rate. A recent study revealed part of the problem: young rats tend to eat only what their mothers eat, and given the abundant food along the littoral adjacent to the peak concentrations of Anacapa rats, there is no reason all the target rats will

C3 accept poison baits. If you miss a few founder rats, it will be gypsy moths all over again. And as you note, survivor populations tend to select for recalcitrance. **2)** *The breeding season for rats is April to September.* How sure are you of this? Mainland populations of black rats breed all year around, with litter size being a function of food availability and the female's weight and particularly fat:lean ratio. Decrudescence/recrudescence of testes is also a function of optimum weight, not solar azimuth as it is in birds. Skinny and obese male rats tend not to contribute to the gene pool. Your "baddest rats," in terms of risk to birds, population concentrations, and hazards to bait applicators are the ones that have year around access to food near the beach. They are the Willy Suttons of the rat world: they hang out in the rocks because that is where the food and shelter are. What could be better than all the birds, limpets, carrion, and addled eggs

C4 you can eat plus a secure retreat lined with bird feathers? **3)** Rats are territorial. In what sense? Adult males with the most testosterone keep lower ranking males away from the females, but is there a well delineated territory? However, territoriality does not seem to be the linchpin of your eradication program. Rats are pioneering animals, and this will have the same

C5 effect as territoriality. 4) *Salamanders are dormant during the proposed baiting period from October to January (page 44).* Mainland slender salamanders are active during the rainy season. Are the Island populations different in this respect? **5)** *Alligator and side-blotched*

C6 *lizards would be active during the application period.* This period corresponds to the time of least activity for *Uta* spp. on the mainland; alligator lizards are active year around at lower elevations.

C7 Two other assumptions you might revisit, although they have no impact on your DEIS: **6)** *Trapping raptors would result in even more occupying the vacated "territory" - B. Walton.* By your account, there are no raptor nesting territories on Anacapa (there once was an active peregrine falcon nesting site there). Fall and winter raptors do not defend hunting territories, and their occurrence on the Islands is intrusive and random. Unless you have species of special concern such as San Clemente shrikes (probably already doomed) or bald eagles in very small numbers, removal is probably out of the question. Raptors will be fatally poisoned, and this invites the question: If a raptor should fall in the Island scrub and no one sees it, has it really fallen? **7)** Finally, there is the canard *"Golden eagles are non-native species to the Islands . . . .* This is a convenient fiction, justifying the removal of golden eagles to save the Island foxes, a sound if desperate measure. The confabulation contains in its rich warp and woof the notion that golden eagles never flew to the Islands until recently when they espied from a great distance the absence of bald eagles and the opportunity to kill foxes when the "good guys in white hats" were not there to protect the foxes. That is a tale any six-year old could enjoy. Golden eagles are "non-native birds" to Anacapa in the same sense that red tailed hawks are - or any other of the casual avian visitors. Bald eagles with nesting territories will defend a stretch of beach from conspecifics in particular and eagles in general; migrating adults and immatures do not defend territories - they do rob others and intimidate. And don't count on them not killing foxes: these sea eagles kill large birds, seal pups, and sea otter pups. Revegetating the Islands will do more to save the foxes than bald eagles - and in the interim you could create fox shelters out of some of the trash and structures left on the Islands. And vaccinate the foxes for parvo and canine distemper. And worm them. What's so hard about that?

Sincerely,
Peter D. Thiem

C2: Rat baits are formulated to be highly palatable to the target species. A battery of tests are required by the EPA to ensure that rats will consume the bait and will have the desired effect on the target population. On Anacapa Island, we are delivering the bait to the rats at a time of year when the population is food stressed and are actively seeking out high quality food resources such as that found in the bait. The bait is formulated to be highly palatable and attractive to the rat population. Island eradications are most likely to be successful if they take place during the annual population cycle when no reproduction is taking place and when rat numbers are declining. This insures that new-born rats will not emerge from their dens after all bait has been consumed, and that most rats will be food stressed and therefore more likely to consume bait.

C3: Work conducted by Erickson (1990) documented the seasonal reproductive condition of rats on Anacapa Island. His work has been cited throughout the EIS.

C4: The basic premise for all successful rat eradications is the delivery of bait into all rat territories. Territory is used synonymously with range.

C5: The application period corresponds to the late dry season on Anacapa Island. Bait will not be applied during the rainy season. During the dry season salamanders would be deep within thick vegetation or deep cracks within the soil to avoid dessication.

C6: Alligator Lizards and Side-blotched Lizards are active year round on Anacapa Island. The herpetofauna will be monitored before, during and after the eradication for measuring impacts from the baiting and the predator release once rats are eradicated. See comments from A6.

C7: Secondary poisoning of birds of prey is of concern. Mortality of individual non-target birds will be mitigated where possible. However, from an ecological perspective such mortality is only significant if it causes a long term population decline. There are no endemic birds of prey on Anacapa Island. The birds of prey on the Channel Islands are habitat limited, i.e., there are more birds than there is available habitat. Data from a raptor control effort around a colony of endangered Least Terns indicates that population effects of such removal are temporary.